

WHAT IS CLAIMED IS:

1. A method for treatment or prevention of a disease or disorder of an eye, the method comprising charging a dispenser with a suitable liquid medicament, disposing the dispenser in operative juxtaposition with the eye, and actuating the dispenser to release a therapeutically effective amount of the medicament into the eye; wherein said dispenser comprises (i) an electrically energizable droplet generating device adapted to issue droplets of the liquid medicament at a rate of about 1 to about 300  $\mu\text{l s}^{-1}$  wherein a therapeutically effective amount of not more than about 50  $\mu\text{l}$  of the medicament is released into the eye in not more than about 1 second, (ii) means for electrically energizing said device, (iii) means for actuating said device, and (iv) a standoff configured to engage a facial surface proximal to the eye and to place the dispenser in operative juxtaposition with the eye.
2. The method of Claim 1 wherein said device is a thermal resistor bubble jet device.
3. The method of Claim 1 wherein said dispenser further comprises means for selecting prior to actuation thereof at least one of a rate and a duration of issuance of the medicament.
4. The method of Claim 3 wherein said selecting means comprises a control interface and display means.
5. The method of Claim 4 wherein said control interface comprises a touch pad or means for data entry analogous thereto.
6. The method of Claim 4 wherein said display means comprises a liquid crystal display unit.
7. The method of Claim 1 wherein the dispenser is charged by installing in a cavity in a housing of the dispenser a replaceable cartridge reservoir containing the medicament; said cartridge reservoir when installed being disposed in fluid connection with a conduit that feeds the medicament from the cartridge to the droplet generating device.
8. The method of Claim 1 wherein the standoff of the dispenser is in a form of a cup having a rim contoured to engage a circumocular surface.

9. The method of Claim 2 wherein the bubble jet device comprises one to a small plurality of nozzles arranged in close proximity to each other.
10. The method of Claim 2 wherein the bubble jet device is (i) disposed within a housing of the dispenser, immediately behind a droplet delivery aperture in said housing; and (ii) oriented whereby droplets issuing from the bubble jet device are propelled through said aperture.
11. The method of Claim 10 wherein the standoff of the dispenser is disposed around the droplet delivery aperture.
12. The method of Claim 1 wherein a therapeutically effective amount of the medicament is released into the eye from the droplet generating device in not more than about 1 second.
13. The method of Claim 1 wherein a therapeutically effective amount of the medicament is released into the eye from the droplet generating device in not more than about 0.5 second.
14. The method of Claim 1 wherein a therapeutically effective amount of the medicament is released into the eye from the droplet generating device in not more than about 0.25 second.
15. The method of Claim 1 wherein a therapeutically effective amount of the medicament is released into the eye from the droplet generating device in not more than about 0.1 second.
16. The method of Claim 1 wherein the medicament is an aqueous composition comprising at least one drug in dispersed form.
17. The method of Claim 1 wherein the medicament is an aqueous composition comprising at least one drug in dissolved form.
18. The method of Claim 17 wherein the at least one drug is present in the medicament at a concentration of less than about 5% weight/volume.
19. The method of Claim 17 wherein the at least one drug is present in the medicament at a concentration of less than about 2% weight/volume.
20. The method of Claim 17 wherein the at least one drug is present in the medicament

at a concentration of less than about 1% weight/volume.

21. The method of Claim 1 wherein the rate of issuance of droplets from the droplet generating device is not less than about  $5 \mu\text{l s}^{-1}$ .
22. The method of Claim 1 wherein the rate of issuance of droplets from the droplet generating device is not greater than about  $50 \mu\text{l s}^{-1}$ .
23. The method of Claim 1 wherein the total volume of the medicament delivered within a release time of not more than about 1 second is not greater than about 25  $\mu\text{l}$ .
24. The method of Claim 1 wherein the total volume of the medicament delivered within a release time of not more than about 1 second is not greater than about 10  $\mu\text{l}$ .
25. The method of Claim 1 wherein the disease or disorder is selected from the group consisting of allergic diseases of the eye, dry eye, keratomalacia, trauma to the eye and adjacent tissues, orbital cellulitis, chronic conjunctivitis, episcleritis, scleritis, superficial punctate keratitis, phlyctenular keratoconjunctivitis, interstitial keratitis, corneal ulcer, uveitis, Behcet's syndrome, sympathetic ophthalmia, endophthalmitis, exophthalmos, bullous keratopathy, dacryostenosis, acute and chronic dacryocystitis, trichinosis, infective diseases of the eye, acute retinal necrosis, chalazion, inversion and eversion of eyelids, neoplastic diseases, cataract, cystoid macular edema, birdshot choroidopathy, reticulum cell sarcoma, vascular retinopathies, diabetic retinopathy, macular degeneration, retinal detachment, retinitis pigmentosa, glaucoma, papilledema, papillitis, retrobulbar neuritis, toxic amblyopia, optic atrophy, presbyopia and ocular motility disorders.
26. The method of Claim 1 wherein the disease or disorder is selected from the group consisting of ocular hypertension, congenital glaucoma, open-angle glaucoma, acute angle-closure glaucoma, chronic angle-closure glaucoma, secondary glaucoma arising from pre-existing ocular disease, retinal vascular diseases, diabetic retinopathy and non-glaucomatous ischemia.
27. The method of Claim 1 wherein the medicament comprises at least one drug selected from the group consisting of demulcents, antimycotics, antibacterials, antivirals, steroids, NSAIDs, selective cyclooxygenase-2 inhibitors, acetylcholine blocking agents, adrenergic agonists, beta-adrenergic blocking agents, carbonic anhydrase

inhibitors, prostaglandins, antihypertensives, antihistamines, anticataract agents, topical anesthetics and regional anesthetics.

28. The method of Claim 1 wherein the medicament comprises at least one drug selected from the group consisting of acebutolol, aceclidine, acetylsalicylic acid, N<sup>4</sup> acetylsulfisoxazole, alclofenac, alprenolol, amfenac, amikacin, amiloride, aminocaproic acid, *p*-aminoclonidine, aminozolamide, anisindione, apafant, atenolol, azithromycin, bacitracin, benoxaprofen, benoxinate, benzofenac, bepafant, betamethasone, betaxolol, bethanechol, brimonidine, bromfenac, bromhexine, bucloxic acid, bupivacaine, butibufen, carbachol, carprofen, cefixime, cefoperazone, cefotaxime, ceftazidime, ceftizoxime, ceftriaxone, celecoxib, cephalexin, chloramphenicol, chlordiazepoxide, chlorprocaine, chlorpropamide, chlortetracycline, cicloprofen, cinmetacin, ciprofloxacin, clidanac, clindamycin, clonidine, clonixin, clopirac, cocaine, colistin, cromolyn, cyclopentolate, cyproheptadine, demecarium, dexamethasone, dibucaine, diclofenac, diflusal, dipivefrin, domeclocycline, dorzolamide, doxycycline, enoxacin, epinephrine, erythromycin, eserine, estradiol, ethacrynic acid, etidocaine, etodolac, etoricoxib, fenbufen, fenclofenac, fenclorac, fenoprofen, fentiazac, flufenamic acid, flufenisal, flunoxaprofen, fluorocinolone, fluorometholone, flurbiprofen and esters thereof, fluticasone propionate, furaprofen, furobufen, furofenac, furosemide, gancyclovir, gentamicin, gramicidin, hexylcaine, homatropine, hydrocortisone, ibufenac, ibuprofen and esters thereof, idoxuridine, indomethacin, indoprofen, interferons, isobutylmethylxanthine, isofluorophate, isoproterenol, isoxepac, ketoprofen, ketorolac, labetolol, lactorolac, latanoprost, levo-bunolol, lidocaine, lonazolac, loteprednol, mafenide, meclofenamate, medrysone, mefenamic acid, mepivacaine, metaproterenol, methacycline, methanamine, methylprednisolone, metiazinic, metoprolol, metronidazole, minocycline, minopafant, mioprofen, modipafant, nabumetome, nadolol, namoxyrate, naphazoline, naproxen and esters thereof, neomycin, nepafenac, nitroglycerin, norepinephrine, norfloxacin, nupafant, ofloxacin, olopatadine, oxaprozin, oxepinac, oxyphenbutazone, oxyprenolol, oxytetracycline, parecoxib, penicillins, perfloxacin, phenacetin, phenazopyridine, pheniramine, phenylbutazone, phenylephrine, phenylpropanolamine, phospholine, pilocarpine, pindolol, pirazolac, piroxicam, pirprofen, polymyxin, polymyxin B,

prednisolone, prilocaine, probenecid, procaine, proparacaine, protizinic acid, pyrimethamine, rimexolone, rofecoxib, salbutamol, scopolamine, silver sulfadiazine, sotalol, sulfacetamide, sulfanilic acid, sulfisoxazole, sulindac, suprofen, tenoxicam, terbutaline, tetracaine, tetracycline, theophyllamine, timolol, tobramycin, tolmetin, travoprost, triamcinolone, trimethoprim, trospectomycin, unoprostone, valdecoxib, vancomycin, vidarabine, vitamin A, warfarin, zomepirac and pharmaceutically acceptable salts, esters and prodrugs thereof.

29. The method of Claim 1 wherein the medicament comprises a PGF<sub>2α</sub> derivative.
30. The method of Claim 29 wherein said PGF<sub>2α</sub> derivative is selected from the group consisting of latanoprost, travoprost and unoprostone.
31. The method of Claim 29 wherein said PGF<sub>2α</sub> derivative is latanoprost.
32. The method of Claim 29 wherein the medicament further comprises a beta-adrenergic blocking agent.
33. The method of Claim 32 wherein the beta-adrenergic blocking agent is timolol.
34. An apparatus for use according to the method of any of Claims 1 to 33.
35. An apparatus for dispensing a liquid medicament to an eye, the apparatus comprising:
  - an electrically energizable droplet generating device adapted to issue droplets of the liquid medicament at a rate of about 1 to about 300  $\mu\text{l s}^{-1}$ ;
  - means for electrically energizing said device;
  - means for actuating said device;
  - a standoff configured to engage a facial surface proximal to the eye whereby the dispenser can be disposed in operative juxtaposition with the eye; and
  - means for selecting prior to actuation at least one of a rate and a duration of issuance of the medicament.
36. The apparatus of Claim 35 wherein said device is a thermal resistor bubble jet device.